

**REMARKS / DISCUSSION OF ISSUES**

The present amendment is submitted in response to the Office Action mailed March 4, 2009. Claims 1-10 are pending in this application.

***I. Claim Rejections under 35 USC 102***

In the Office Action, Claims 1-10 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,891,679 (“Atarashi”). Applicants respectfully traverse the rejections.

***Claims 1-2 are allowable***

The cited portions of Atarashi do not anticipate claim 1, because the cited portions of Atarashi fail to disclose every element of claim 1. For example, the cited portions of Atarashi fail to disclose or suggest, “sensing an image captured by the optical device (10) on a different subset (24, 24’) of the grid of pixels (22); and calculating the orientation of the device (1) from the position difference of the subset (24, 24’) on the grid (22)”, as recited in claim 1 (Emphasis Added). It is respectfully submitted that the cited portions of Atarashi fail to disclose or suggest the elements of claim 1 above because Atarashi is directed to an image pickup apparatus capable of conducting appropriate imaging by using an optical element wherein electrowetting phenomenon is utilized as an autofocusing means. Atarashi describes a voltage-supplying device shown schematically as V in Fig. 1. The voltage-supplying device is connected with electrode P1 and electrode P2, and it impresses voltage as occasion demands to generate an electric field, thereby generating the electrowetting phenomenon, causing a form of the second fluid body LQ2 and refracting actions to be changed. In contrast to Atarashi, the present invention relates to a device and method for detecting an orientation of the device that avoids or at least reduces mechanical wear. The device having an orientation detector that avoids or at least reduces mechanical wear. The method is based on the realization that an optical device such as a variable focus lens can be modified to serve as an orientation detector for detecting an orientation of the device with respect to a direction of an acceleration force such as gravity. Typically, the grid of pixels of the image sensor behind

the optical device are only partially exposed to an image captured by the optical device, that is, the grid of pixels is larger than the area of exposure. By detecting which pixels are not exposed to the image captured by the optical device, the orientation of the image on the grid can be determined. Since this orientation is a function of gravity or another acceleration force, the orientation of the device with respect to the direction of such a force can be calculated.

A method of determining the orientation of a device according to the invention is described throughout the specification and in particular at pars. 22-24. The method includes, in a first orientation, the centre of a light beam coincides with an optical axis X through the optical device. The trajectory of the light passing through the optical device 10 is measured, preferably on the grid of pixels 22 of the sensor 20, although other means of detection can be thought of, e.g. an array of discrete sensors. The light beam covers an area 24 of the grid of pixels 22. The area 24 covers a subset of pixels of the grid of pixels 22. The pixels of the sensor 20 outside the area 24 remain unexposed in the first orientation.

In a second orientation of the device 1, as shown on the right hand side of FIG. 2, the device 1 is tilted with respect to the gravitational field indicated by line Y. Because of the different densities of the first liquid A and the second liquid B, the interface 14 tilts with respects to the optical axis X under the influence of gravity. Consequently, the trajectory of the light through the optical device 10 changes, i.e. the centre of a light beam passing through the optical device 10 no longer coincides with the optical axis X upon exiting the optical device 10, and the **exposed area 24'** of grid of pixels 22 of the sensor 20 **is shifted in comparison to the exposed area 24. In other words, the subset of pixels that are exposed in the first orientation of the device 1 differs from the subset of pixels in the second orientation of the device 1, with the difference being a function of the orientation. Thus, the trajectory of the light passing through the optical device 10 contains information about the orientation of the optical device 10 and the device 1 in which the optical device 10.**

It is respectfully submitted that the electrowetting principle and device incorporating said principle taught in Atarashi is different from the method of the invention and device

incorporating such method. That is, there is no teaching or suggestion in Atarashi of **sensing** an image captured by the optical device (10) on a **different** subset (24, 24') of the grid of pixels (22); and **calculating** the orientation of the device (1) from the position **difference** of the subset (24, 24') on the grid (22), as claimed in claim 1.

Based on the foregoing, it is respectfully submitted that claim 1 is allowable.

Claim 2 depends from claim 1, which Applicant has shown to be allowable. Hence the cited portions of Atarashi fail to disclose or suggest at least one element of claim 2. Accordingly, claim 2 is also allowable, at least by virtue of its dependence from claim 1.

## ***II. Claims 3-10 are allowable***

Independent Claim 3 recites similar subject matter as Independent Claim 1 and therefore contains the limitations of Claim 1. It is respectfully submitted that the device of Atarashi does not disclose or suggest a sensor (20) comprising a grid of pixels (22), the sensor (20) being arranged to sense an image captured by the optical device (10) on a **different** subset (24, 24') of the grid of pixels (22); and calculating means (30) for calculating an orientation of the device (1) with respect to a direction of an acceleration force from the position **difference** of the subset (24, 24') on the grid (22). Hence, claim 3 is allowable.

Claims 4-10 depend from claim 3, which Applicant has shown to be allowable. Hence the cited portions of Atarashi fail to disclose or suggest at least one element of each of claims 4-10. Accordingly, claims 4-10 are also allowable, at least by virtue of their dependence from claim 3.

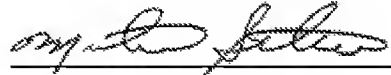
## **Conclusion**

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-10 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels

that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael A. Scaturro", is written over a horizontal line.

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